B871/984

Preprint from the 1984

BUREAU OF MINES MINERALS YEARBOOK

The Mineral Industry of Bulgaria

NEWARK PUBLIC LIBRARY

FEB 4 1986

U. S. GOVT. PUBS.
DEPOSITORY 376

UNITED STATES DEPARTMENT OF THE INTERIOR

I28.37/a 2:

UNITED STATES DEPARTMENT OF THE INTERIOR • Donald Paul Hodel, Secretary

BUREAU OF MINES • Robert C. Horton, Director

This publication is a chapter from the current Bureau of Mines Minerals Yearbook, comprising *Volume I, Metals and Minerals; Volume II, Area Reports: Domestic; Volume III, Area Reports: International.* The separate volumes of the Yearbook are sold by the Superintendent of Documents, Washington, D.C. 20402.

The Mineral Industry of Bulgaria

By Tatiana Karpinsky[1]

In 1984, the most important mineral production of Bulgaria was of copper, lead, zinc, some iron and manganese, fertilizers, cement, steel, kaolin, and certain rare elements. Principal sources of fuel supply were coal basins, scattered throughout the country, that contained lower rank lignite and brown coal. Domestic reserves of petroleum and natural gas were insignificant. Bulgaria produced more than 70% of its needs for rolled steel, fully satisfied its needs for refined lead and zinc, produced 98% of its refined copper, 91% of rolled heavy nonferrous metals, and 100% of rolled aluminum, mostly from imported raw materials. The iron and steel and nonferrous metals industries, including mining, provided about 7% of Bulgaria's industrial production. The total volume of capital investment amounted to more than 8 billion leva (L).[2] Over 74% of the investment was devoted to electric power production, coal mining, metal-processing industry, the chemical industry, and iron and steel production. Major projects put into operation included the Vasil Kolarov State cement plant at Temilkovo for the production of 560,000 tons per year of cement, extension of the chemical plant at Stara Zagora for the production of an additional 55,000 tons per year of ammonia, and the 104 kilometers of the new U.S.S.R.-Bulgaria gas pipeline. The total number of employees in state enterprises was 1.4 million at yearend 1983. The coal industry employed 46,500; iron and steel production (including ore mining), 36,800; manufacturing and metal working, 241,600; and the production of electric energy and steam heat, 22,500. In 1985, national income is to increase by 4% compared with that of 1984, output of coal is planned to rise substantially by 14%, and output of electric energy is to rise by 3.5%. Output in the iron and steel industry is to rise by 7.5%. In 1985, Bulgaria is to also receive 5.5 billion cubic meters of natural gas from the Soviet Union.

PRODUCTION

Total industrial production did not quite reach the target of 5% above that of 1983; a 4.5% growth was reported. The state plan goals were met for the production of coal, hot-rolled steel, and nitric and phosphorus fertilizers and were not met for production of cold-rolled steel in sheets, tin-coated steel in sheets, calcinated soda, cement, and bricks. About 30% of Bulgaria's electric energy was produced from domestic low-calorie lignite, 29% from nuclear energy, 8% from hydroelectric power, 4% from gas, and 3% from oil. The remainder was from imported sources, mainly coal.

The country's only nuclear powerplant, at Kozlodoui on the Danube, operated four 440-megawatt reactors. The first 1,000-megawatt reactor would become operational with Soviet assistance in 1986; in 1988, a second 1,000-megawatt reactor was scheduled to come on-stream. Bulgaria's second nuclear powerplant was to be built at Beline, with most of the equipment for four 1,000-megawatt reactors coming from the U.S.S.R.

Table 1.—Bulgaria: Production of mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity[2]	1980	1981	1982	1983[p]	1984[e]
METALS					
Cadmium metal, smelter[e]	210	210	[r]200	[r]200	200
Copper:					
Mine output, metal content	62,000	62,000	70,000	80,000	80,000
Metal, primary and secondary:					
Smelter	59,000	62,000	62,000	60,000	60,000
Refined	63,000	62,000	65,000	62,000	62,000
Iron and steel:					
Iron ore:					
Gross weight thousand tons	1,886	1,754	1,552	1,803	1,500
Fe content do.	590	537	474	554	450
Iron concentrates do.	896	797	732	824	700
Metal:					
Pig iron do.	1,527	1,512	1,558	1,623	1,500
Ferroalloys, electric furnace, all types do.	45	55	55	55	55
Steel, crude do.	2,567	2,483	2,584	2,831	2,800
Semimanufactures, rolled do.	3,213	3,351	3,253	3,235	3,235
Lead:					
Mine output, metal content	116,000	116,000	95,000	95,000	95,000
Metal, smelter, primary and secondary	119,000	119,000	118,000	116,000	116,000
Manganese ore:					
Gross weight	49,000	45,321	45,000	45,000	45,000
Mn content	14,200	13,207	13,207	13,100	13,200
Molybdenum, mine output, metal content[e]	150	150	150	150	150
Silver, mine output, metal content[e] thousand troy ounces	930	930	930	930	930
Zinc:					
Mine output, metal content	70,000	[e]65,000	66,000	68,000	68,000
Metal, smelter, primary and secondary	90,000	90,000	90,000	91,000	91,000
NONMETALS					
Asbestos	700	400	600	700	600
Cement, hydraulic thousand tons	5,359	5,433	5,614	5,644	[3]5,717
Clays: Kaolin	208,000	221,422	237,000	242,000	240,000
Gypsum and anhydrite:					
Crude thousand tons	311	350	376	386	370
Calcined	88	94	104	116	100
Lime: Quicklime thousand tons	1,848	1,758	1,776	1,634	1,700
Nitrogen: N content of ammonia	827,216	838,764	847,000	921,292	830,000
Pyrites, gross weight[e]	680,000	680,000	680,000	680,000	680,000
Salt, all types[e]	87,000	87,000	87,000	87,000	87,000
Sodium carbonate, calcined thousand tons	1,479	1,469	1,459	1,271	1,460
Sulfur:[e]					
S content of pyrites	300,000	300,000	300,000	300,000	300,000
Byproduct, all sources	70,000	70,000	70,000	70,000	70,000
Total	370,000	370,000	370,000	370,000	370,000
MINERAL FUELS AND RELATED MATERIALS					
Coal, marketable:					
Anthracite thousand tons	97	89	80	83	80
Bituminous do.	170	157	161	160	160
Brown do.	5,793	5,657	5,537	5,342	6,700
Lignite do.	24,153	23,338	26,437	26,805	26,860
Total do.	30,213	29,241	32,215	32,390	33,800
Coke do.	1,348	1,381	1,274	1,270	1,300
Gas, natural, marketed million cubic feet	6,714	4,840	[e]4,840	[e]4,800	4,800
Petroleum:					
Crude:					
As reported[e] thousand tons	180	180	180	180	180
Converted[e] thousand 42-gallon barrels	1,314	1,314	1,314	1,314	1,314
Refinery products do.	84,448	[r]94,535	NA	NA	NA

[e]Estimated. [p]Preliminary. [r]Revised. NA Not available.

[1]Table includes data available through July 12, 1985.

[2]In addition to the commodities listed, bismuth, chromite, gold, palladium, platinum, tellurium, uranium, barite, fluorspar, magnesite, and a variety of crude construction materials (common clays, sand and gravel, dimension stone, and crushed stone) are produced, but available information is inadequate to make reliable estimates of output levels.

[3]Reported figure.

TRADE

In 1984, the value of exports was L12,966 billion, reflecting an increase of about 10% compared with that of 1983, and the value of imports was L12,795 billion, reflecting an increase of about 7%. Imports of fuel, minerals, and metals accounted for about 47% of the value of Bulgaria's total imports. Exports of fuel, minerals, and metals comprised only about 11%. Trade with centrally planned economy countries accounted for 76.4% of the country's total turnover, about 57.5% with the U.S.S.R. The Soviet Union supplied Bulgaria with iron ore, ferrous and nonferrous metals, natural gas, crude oil, petroleum products, coal for producing coke, and electric energy.

Table 2.—Bulgaria: Apparent exports of selected mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Destinations, 1983	
			United States	Other (principal)
METALS				
Aluminum: Metal including alloys:				
Scrap	--	2,017	--	Italy 1,817; West Germany 200.
Unwrought	3,594	6,067	--	Japan 5,367; Italy 670.
Semimanufactures	625	9	--	Belgium-Luxembourg 5; Japan 2.
Cadmium: Metal including alloys, all forms	35	33	--	All to Czechoslovakia.
Copper:				
Sulfate	400	1,665	--	All to West Germany.
Metal including alloys:				
Scrap	216	26	--	All to Sweden.
Unwrought	71	NA		
Semimanufactures	194	745	--	Yugoslavia 662; Italy 46; Jordan 25.
Gold:				
Waste and sweepings value, thousands	$398	NA		
Metal including alloys, unwrought and partly wrought troy ounces	1,994	NA		
Iron and steel: Metal:				
Scrap	57,000	38,000	--	Yugoslavia 29,519.
Pig iron, cast iron, related materials	[2]18,931	[3]38,200	--	Yugoslavia 7,818; undetermined 29,144.
Ferroalloys:				
Ferrochromium	2,216	5,040	--	Belgium-Luxembourg 3,830; Sweden 644.
Ferromanganese	[2]7,566	NA		
Ferrosilicon	6,622	2,588	--	West Germany 1,738; Austria 850.
Silicon metal	2	NA		
Unspecified	11,594	685	--	Belgium-Luxembourg 637; Italy 48.
Steel, primary forms	242,168	162,000	--	West Germany 43,342; Italy 28,780; Yugoslavia 23,987.
Semimanufactures:				
Bars, rods, angles, shapes, sections thousand tons	59	66	--	NA.
Universals, plates, sheets do.	527	555	--	Cuba 57; Pakistan 37; undetermined 284.
Hoop and strip do.	3	4	--	Mainly to Greece.
Rails and accessories do.	4	5	--	NA.
Wire do.	35	43	--	Hungary 3; Yugoslavia 3; undetermined 37.
Tubes, pipes, fittings do.	61	44	--	Poland 13; Cuba 11; Hungary 2.
Castings and forgings, rough do.	(4)	1	--	NA.
Lead:				
Oxides	[2]843	728	--	Yugoslavia 716; Greece 12.
Metal including alloys, unwrought	4,358	1,141	--	All to Greece.
Lithium: Oxides and hydroxides	--	38	--	All to Italy.
Manganese: Ore and concentrate, metallurgical-grade	10,000	[3]28,500	--	All to Czechoslovakia.
Molybdenum: Ore and concentrate	291	321	--	All to West Germany.
Nickel: Metal including alloys:				
Scrap	3	NA		
Unwrought	4	110	--	All to Yugoslavia.
Semimanufactures	76	NA		
Platinum-group metals: Metals including alloys, unwrought and partly wrought value, thousands	$81	NA		

See footnotes at end of table.

Table 2.—Bulgaria: Apparent exports of selected mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Destinations, 1983	
			United States	Other (principal)
METALS —Continued				
Silver:				
Waste and sweepings value, thousands	$461	$390	--	West Germany $297; Belgium-Luxembourg $93.
Metal including alloys, unwrought and partly wrought do.	$445	$156	--	All to West Germany.
Zinc: Metal including alloys:				
Unwrought	14,323	13,456	--	Czechoslovakia 10,000; Yugoslavia 1,337.
Semimanufactures	25	30	--	All to Cyprus.
Other:				
Ores and concentrates	--	23	--	All to Belgium-Luxembourg.
Ashes and residues	18	NA		
Base metals including alloys, all forms	47	23	--	All to West Germany.
NONMETALS				
Abrasives, n.e.s.: Grinding and polishing wheels and stones	(4)	24	--	Yugoslavia 13; Italy 11.
Barite and witherite	[3]141,049	NA		
Boron materials: Crude natural borates	--	1,085	--	All to West Germany.
Cement[2]	473,621	509,100	--	Libya 118,200; Hungary 114,000; Switzerland 96,000.
Clays, crude:				
Kaolin	[3]20,250	5,002	--	All to Poland.
Unspecified	1,973	4,574	--	Greece 4,238; Italy 336.
Diamond: Industrial stones value, thousands	$3,779	$176	--	All to Belgium-Luxembourg.
Fertilizer materials: Manufactured:				
Ammonia	117	NA		
Nitrogenous[2]	539,987	694,872	--	NA.
Phosphatic	2,150	NA		
Potassic	1,570	5,027	--	All to Indonesia.
Unspecified and mixed	106,344	44,467	--	All to Pakistan.
Mica:				
Crude including splittings and waste	29	NA		
Worked including agglomerated splittings	2	NA		
Nitrates, crude[2]	6,870	6,723	--	U.S.S.R. 2,720; Czechoslovakia 807; Spain 700.
Pigments, mineral: Iron oxides and hydroxides, processed	105	33	--	All to Yugoslavia.
Precious and semiprecious stones other than diamond:				
Natural value, thousands	$18	$168	--	All to Italy.
Synthetic do.	$466	$291	--	All to West Germany.
Salt and brine	411	NA		
Sodium compounds, n.e.s.: Carbonate, manufactured[2] thousand tons	1,120	945	--	U.S.S.R. 476; Hungary 115; Czechoslovakia 37.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	[3]8,423	7,678	--	Hungary 4,794; Italy 1,222; Poland 1,038.
Worked	[3]181,745	1,275	NA	All to West Germany.
Gravel and crushed rock	202	69	--	Italy 47; Greece 22.
Quartz and quartzite	8	NA		
Sand other than metal-bearing	29,409	12,350	--	All to Greece.
Sulfur: Elemental, crude including native and byproduct	13,413	NA		
Other:				
Crude	14,745	12,562	--	Hungary 11,201; West Germany 1,361.
Slag and dross, not metal-bearing	--	3,687	--	All to Italy.
MINERAL FUELS AND RELATED MATERIALS				
Carbon: Carbon black	81	32	--	Do.
Coal: Anthracite and bituminous	[3]246,000	[3]223,000	--	Belgium-Luxembourg 76,670; Sweden 21,035; undetermined 113,765.
Petroleum refinery products:				
Liquefied petroleum gas thousand 42-gallon barrels	504	625	--	Yugoslavia 274; Italy 258.
Gasoline do.	712	477	--	West Germany 299; Italy 143.
Mineral jelly and wax do.	6	23	--	Italy 22.

See footnotes at end of table.

Table 2.—Bulgaria: Apparent exports of selected mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Destinations, 1983	
			United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS —Continued				
Petroleum refinery products —Continued				
Kerosine and jet fuel thousand 42-gallon barrels	108	30	--	Hungary 18; Italy 12.
Distillate fuel oil do.	957	397	--	West Germany 221; Yugoslavia 109.
Lubricants do.	255	202	--	Yugoslavia 128; Belgium-Luxembourg 49.
Residual fuel oil do.	4,088	2,011	--	Italy 1,251; West Germany 430; Greece 176.
Unspecified do.	110	146	--	All to Poland.

[p]Preliminary. NA Not available.

[1]Table prepared by Jozef Plachy. Owing to a lack of official trade data published by Bulgaria, this table should not be taken as a complete presentation of this country's mineral trade. Unless otherwise specified, these data have been compiled from United Nations information and data published by the trading partner countries.

[2]Official Trade Statistics of Bulgaria.

[3]Statistical Yearbook of Members of the Council for Mutual Economic Assistance, Moscow, U.S.S.R.

[4]Less than 1/2 unit.

Table 3.—Bulgaria: Apparent imports of selected mineral commodities[1]

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Sources, 1983	
			United States	Other (principal)
METALS				
Aluminum:				
Oxides and hydroxides	247	418	--	Italy 310; Japan 94.
Metal including alloys:				
Unwrought	6,993	14,804	--	Hungary 9,826; Yugoslavia 4,475.
Semimanufactures	5,745	5,688	--	Hungary 2,312; West Germany 1,524; Yugoslavia 778.
Bismuth: Metal including alloys, all forms	8	NA		
Chromium: Oxides and hydroxides	202	110	--	All from Poland.
Cobalt:				
Oxides and hydroxides	2	NA		
Metal including alloys, all forms	11	2	--	All from Finland.
Copper:				
Matte and speiss including cement copper	--	347	--	All from Yugoslavia.
Sulfate[3]	7,712	3,569	--	All from U.S.S.R.
Metal including alloys:				
Unwrought	1,992	700	--	All from Belgium-Luxembourg.
Semimanufactures	2,495	1,993	--	West Germany 1,568; Japan 133; Austria 110.
Gold: Metal including alloys, unwrought and partly wrought troy ounces	277	579	--	All from West Germany.
Iron and steel:				
Iron ore and concentrate excluding roasted pyrite[3] thousand tons	2,360	2,313	--	U.S.S.R. 2,206.
Metal:				
Scrap	2,220	NA		
Pig iron, cast iron, related materials[3]	399,488	407,482	--	U.S.S.R. 375,728; Algeria 21,755.
Ferroalloys:				
Ferromanganese	--	3,000	--	West Germany 815.
Ferromolybdenum	5	NA		
Ferrosilicomanganese	[3]2,216	NA		
Ferrosilicon	[3]5,063	NA		
Silicon metal	200	NA		
Unspecified	[3]14,314	23,000	--	NA.
Steel, primary forms	[3]675,415	571,000	--	NA.

See footnotes at end of table.

Table 3.—Bulgaria: Apparent imports of selected mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Sources, 1983	
			United States	Other (principal)
METALS —Continued				
Iron and steel —Continued				
Metal —Continued				
Semimanufactures:				
Bars, rods, angles, shapes, sections thousand tons	334	382	--	Hungary 68; U.S.S.R. 48; undetermined 195.
Universals, plates, sheets[2] do	244	191	--	U.S.S.R. 122; West Germany 29; Czechoslovakia 15.
Hoop and strip[2] do	4	6	--	U.S.S.R. 4; Poland 1.
Rails and accessories do	90	63	--	NA.
Wire do	15	15	--	Austria 7; West Germany 1.
Tubes, pipes, fittings do	70	73	(3)	West Germany 9; Japan 9; undetermined 43.
Castings and forgings, rough do	13	6	--	NA.
Lead:				
Ore and concentrate	6,985	4,000	--	All from Italy.
Oxides	3	--		
Metal including alloys, unwrought	1	e700	--	NA.
Magnesium: Metal including alloys:				
Unwrought	40	NA		
Semimanufactures	2	22	--	All from Yugoslavia.
Manganese:				
Ore and concentrate, metallurgical-grade	581,900	596,800	--	U.S.S.R. 81,000.
Oxides	20	35	--	Ireland 20; Japan 15.
Metal including alloys, all forms	5	NA		
Mercury 76-pound flasks	59	NA		
Molybdenum:				
Ore and concentrate	152	147	--	All from West Germany.
Metal including alloys, all forms	1	NA		
Nickel:				
Oxides and hydroxides	10	NA		
Metal including alloys:				
Unwrought	1	1	--	Do.
Semimanufactures	89	117	--	West Germany 104; Sweden 13.
Platinum-group metals: Metals including alloys, unwrought and partly wrought value, thousands	$1,198	$1,850	--	West Germany $1,321; Italy $528.
Silver: Metal including alloys, unwrought and partly wrought do	$204	$481	--	West Germany $384; Austria $97.
Tin:				
Oxides	--	6	--	All from Austria.
Metal including alloys:				
Unwrought	--	2	--	Do.
Semimanufactures	3	NA		
Titanium:				
Ore and concentrate	3,588	2,600	--	All from West Germany.
Oxides	258	265	--	West Germany 255.
Metal including alloys, all forms	17	4	--	All from West Germany.
Tungsten: Metal including alloys, all forms	6	16	(3)	Italy 12; Japan 2.
Zinc:				
Ore and concentrate	32,959	9,934	9,934	
Metal including alloys, semimanufactures	6	3	--	Yugoslavia 2; Belgium-Luxembourg 1.
Zirconium: Ore and concentrate	1,718	1,779	--	All from West Germany.
Other:				
Ores and concentrates	--	10	--	All from Canada.
Oxides and hydroxides	524	58	--	All from West Germany.
Base metals including alloys, all forms	30	1	--	Do.
NONMETALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc	1	21	--	Italy 20.
Artificial:				
Corundum	2,512	1,730	--	Italy 1,259; Hungary 470.
Silicon carbide	1,657	642	--	All from Italy.
Dust and powder of precious and semi-precious stones including diamond value, thousands	--	$5	$5	
Grinding and polishing wheels and stones	1,178	1,199	--	Yugoslavia 429; Austria 419; Italy 328.

See footnotes at end of table.

Table 3.—Bulgaria: Apparent imports of selected mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Sources, 1983	
			United States	Other (principal)
NONMETALS —Continued				
Asbestos, crude	[3]18,116	1,715	--	Greece 1,020; Canada 695.
Boron materials: Oxides and acids	1	1	--	All from West Germany.
Cement[3]	110,197	48,122	--	U.S.S.R. 34,643; Czechoslovakia 12,879.
Chalk	20	NA		
Clays, crude:				
Chamotte earth	9	NA		
Unspecified	2,439	8	--	All from West Germany.
Diamond:				
Gem, not set or strung, value, thousands	$66	NA		
Industrial stones, do	$9,780	$2,859	--	West Germany $2,858.
Diatomite and other infusorial earth	395	156	--	Austria 96; West Germany 60.
Fertilizer materials: Manufactured:				
Ammonia	6	5	--	All from West Germany.
Nitrogenous	1	NA		
Phosphatic	[3]322,876	[5]600,000	89,832	NA.
Potassic, K_2O content	[3]243,155	[5]241,071	--	U.S.S.R. 132,500.
Unspecified and mixed	214	814	--	Belgium-Luxembourg 465; West Germany 198.
Fluorspar	262	196	--	All from West Germany.
Graphite, natural	513	409	--	Do.
Lime	21	30	--	Do.
Magnesium compounds:				
Magnesite	7,000	8,000	--	All from Czechoslovakia.
Oxides and hydroxides	213	46	--	All from Japan.
Other	92	125	--	All from Yugoslavia.
Mica:				
Crude including splittings and waste	15	5	--	All from West Germany.
Worked including agglomerated splittings	8	18	--	Austria 14; West Germany 4.
Phosphates, crude[3], thousand tons	1,538	1,658	--	U.S.S.R. 883; Morocco 147; Tunisia 98.
Pigments, mineral: Iron oxides and hydroxides, processed	315	349	18	West Germany 276; Japan 55.
Precious and semiprecious stones other than diamond:				
Natural, value, thousands	$103	NA		
Synthetic, do	$81	$81	--	West Germany $80.
Pyrite, unroasted	257,000	262,000	--	All from U.S.S.R.
Salt and brine	[3]206,313	1,501	--	All from West Germany.
Sodium compounds, n.e.s.:				
Carbonate, manufactured	1	NA		
Sulfate, manufactured	1,000	502	--	Do.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	--	40	--	Yugoslavia 38.
Worked	5	75	--	Greece 60; Italy 13.
Dolomite, chiefly refractory-grade	--	166	--	All from Poland.
Gravel and crushed rock	940	713	--	Yugoslavia 698; Italy 15.
Quartz and quartzite	855	1,104	--	All from Sweden.
Sand other than metal-bearing	133	13	--	Yugoslavia 11.
Sulfur:				
Elemental:				
Crude including native and by-product	73,927	55,000	--	All from Poland.
Colloidal, precipitated, sublimed	10	NA		
Sulfuric acid	7,155	12,351	--	Yugoslavia 12,316.
Talc, steatite, soapstone, pyrophyllite	158	192	--	Austria 98; Finland 85.
Other: Crude	550	654	--	Greece 560; West Germany 94.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural	6	3	--	Finland 2; West Germany 1.
Carbon: Carbon black[3]	31,908	30,280	--	U.S.S.R. 29,118; East Germany 530.
Coal: Bituminous[3], thousand tons	5,480	5,367	--	U.S.S.R. 5,227.
Coke and semicoke[3], do	483	502	--	U.S.S.R. 274; Poland 99; Czechoslovakia 35.
Gas, natural: Gaseous, million cubic feet	NA	19	--	All from U.S.S.R.
Peat including briquets and litter	18	NA		

See footnotes at end of table.

Table 3.—Bulgaria: Apparent imports of selected mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

Commodity	1982	1983[p]	Sources, 1983	
			United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS —Continued				
Petroleum refinery products:				
Liquefied petroleum gas 42-gallon barrels	--	35	--	All from Austria.
Gasoline do	169,881	19,958	--	Italy 12,810; Austria 4,726.
Mineral jelly and wax do	5,801	850	--	Italy 622; West Germany 228.
Kerosine and jet fuel do	20,724	93	--	Yugoslavia 70; West Germany 23.
Distillate fuel oil do	2,829	440	--	Italy 343; West Germany 97.
Lubricants do	33,530	30,772	NA	West Germany 16,604; Austria 7,084; Greece 3,752.
Residual fuel oil do	142,411	243,356	--	All from Greece.
Bitumen and other residues do	38,803	30,809	--	Hungary 30,264; West Germany 515.
Bituminous mixtures do	6,491	170	--	Austria 158.
Petroleum coke do	--	3,086	--	All from West Germany.

[p]Preliminary. NA Not available.

[1]Table prepared by Jozef Plachy. Owing to a lack of official trade data published by Bulgaria, this table should not be taken as a complete presentation of this country's mineral trade. Unless otherwise specified these data have been compiled from United Nations information and data published by the trading partner countries.

[2]Official Trade Statistics of Bulgaria.

[3]Less than 1/2 unit.

[4]World Metal Statistics, World Bureau of Metal Statistics, London, United Kingdom.

[5]Statistical Yearbook of Members of the Council for Mutual Economic Assistance, Moscow, U.S.S.R.

COMMODITY REVIEW

METALS

Copper.—Copper production was mainly obtained from open pit operations in the central Srednogorie region. The Medet strip mine has been in operation for about 20 years, producing about 8 million tons per year of ore at a low 0.3% copper content. Nearby was the Elatsite strip mine, in operation for about 5 years with an output of 6 million tons per year of copper ore of 0.4% copper content. A new surface mine was being developed at Assarel, some 12 kilometers from Elatsite, with planned output of 15 million tons of ore per year grading about 0.3% copper content. These surface mines were designed with benches 15 meters high and 25 to 30 meters wide and use 4.6-cubic-meter shovels in conjunction with 27-ton and 40-ton dump trucks. Under an agreement signed in 1979 between Bulgaria and Finland, Outokumpu-Ahlstrom Oy and Rauma-Repola Oy (AOR) was installing Outokumpu flash-smelting technology at the Georgi Damyanov copper plant; the program was scheduled for completion at yearend 1985. In addition to the smelter, a new electrolytic refinery and a power station were under construction. The new smelter will produce anode copper from concentrates grading 13.85% copper and produce a matte containing 45% to 55% copper.

Iron and Steel.—The surface mine at Kremikovtsi in the Sofia region produced about 75% of the country's iron ore. The balance came from underground operations at the Martinovo and Kroumovo Mines. Bulgaria's output of iron ore was insufficient to satisfy domestic needs, and about 2.3 million tons of iron ore was imported from the U.S.S.R. Two large metallurgical complexes, the Lenin Metallurgical Complex at Pernik and the Kremikovtsi Complex near Sofia, were in operation. Kremikovtsi's rolling mills were to be further modernized and production of tinplate and plastic-coated coil increased. Argon refining was introduced at the plant, and the No. 4 coke oven battery, with a capacity of 650,000 tons per year, was started up. The proportion of high-grade steels to total production was planned to reach 40% within 5 years, from the 1984 level of 17.8%.

Lead and Zinc.—Bulgaria's lead-zinc production was based on underground operations at G. Dimitsov, Gorubso, Kolarov, Madjarovo, Ossogovo, and a few other mines. About 85% of all the country's lead-zinc deposits were concentrated in the Gorubso lead-zinc area in the Rhodopes region in the vicinity of Madan and Rudozen. The

typical minerals were galena, sphalerite, chalcopyrite, and pyrite, plus a few others. The ore of the Gorubso mines averaged approximately 2% lead and 1.5% zinc. Lead concentrate and zinc concentrate were processed mainly at the Plovdiv and Kurdjali smelters. A new concentrator to increase output was under construction at Ossogovo.

NONMETALS

Fertilizer Materials.—Exports of urea increased because of the commissioning of the third Vratsa urea unit, originally scheduled to come on-stream at the end of 1981 but which eventually took place in January 1983. This expanded Bulgarian urea capacity by 92,000 tons per year of nitrogen, to 687,000 tons per year.

Kaolin.—Deposits of kaolin occurred in the northeast part of Bulgaria in Vijatovsky, Senovsky, Kaolinovsky, and Dulovsky regions. The deposits were identical in geological structures and origin. It was estimated that total reserves of kaolin in Bulgaria were enough for surface exploitation for the next 50 years. About one-third of the reserves were estimated to be suitable for the porcelain industry, and two-thirds, for the refractory industry. The kaolin deposits were located at depths of about 0.5 to 30 meters, with a thickness of 40 to 50 meters. The deposits contained 14% to 22% pure kaolin.

MINERAL FUELS

Bulgaria had about 5 billion tons of lignite available for exploitation, which with promising probable reserves could be increased by about 1 billion tons. The biggest reserves of lignite were found at the East Maritsa lignite basin, near the town of Zagora, with over 2.9 billion tons of reserves, of which 2.1 billion tons were suitable for surface mining. Other lignite reserves, about 180 million tons, were at Maritsa-Zapad, and about 500 million tons were near Sofia. The brown coal reserves were mainly in the Bobov Dol, Pernik, and Pirin Basins and were estimated at 300 million tons. A new mine named Marshal Tolbukhin was opened at Pernik in September. Hard coking coal reserves were found in the Balkan Coalfield and were estimated at 30 million tons. The country had 33 mines in production, including 7 open pits that produced about 81% of the total. In 1983, the East Maritsa Field, where lignite output was surface mined, produced 69% of the total coal output. At full development of the two largest mines at East Maritsa, Troyanovo-Sever and Troyanovo-Yug, their annual capacity will reach 19.5 million and 26 million tons, respectively. Over the next 15 years, it was planned to double output to 57 million tons per year. The greater part of this expansion will be in open pit operations of the East Maritsa, Elhova, Lom, and Sofia Basins. The first mine in the Dobrudja Basin was planned to reach a capacity of 3.5 million tons per year by the end of the century. Two other deep mines with similar capacity were planned for the future.

---

[1]Foreign mineral specialist, Division of International Minerals.

[2]Official exchange rate for the Bulgarian lev (L) for 1984 was L0.97 = US$1.00, but values were not converted to dollars because the lev is not freely convertible.

*U.S. GOVERNMENT PRINTING OFFICE: 1985-491-457:20245